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United States Department of Agriculture,

BUREAU OF PLANT INDUSTRY,

Office of Farm Management,

WASHINGTON, D. C.

TOMATO GROWING AS CLUB WORK IN THE NORTH AND WEST

By L. C. CORBETT,

Horticulturist in Charge of Horticultural Investigations.

INTRODUCTION.¹

The following suggestions on the cultivation of the tomato are intended for those who wish to grow tomatoes in connection with canning-club work or for home use.

The instructions are brief and somewhat general in their application to the 36 States within this territory. We would suggest that club members write to State experiment stations for added information in regard to the more local problems of tomato growing.

In the growing of tomatoes the plants should be started early. To this end a small cold frame or hotbed will be found useful.

CONSTRUCTION OF COLD FRAMES AND HOTBEDS.

Cold frames and hotbeds should be located in a well-protected place, so that cold winds will not blow upon them. They should also be placed near a convenient water supply and near a path that is frequently traveled. If they can be arranged in the lee of a fence or

¹ The suggestions and instructions on the growing and cultivation of tomatoes have been prepared especially for the membership of the garden and canning clubs in the Northern, North-Central, and Western States, at the request of the Specialist in Charge of Club Work for the Office of Farm Management.

For additional information on tomato culture, send to the United States Department of Agriculture, Division of Publications, Washington, D. C., for Farmers' Bulletins 203, 220, 359, and 521. These will give you much of value on growing, canning, and marketing tomatoes and other garden products.

Do not fail to keep this circular, together with your club crop report, in a convenient place, where you can review, use instructions, and keep your club records for the entire season. If you have not a blank form for your crop report, send for one at once to the Office of Farm Management, Department of Agriculture, Washington, D. C.

building so as to have a southern exposure this will prove of great advantage. The cold frame should be made by using lumber, preferably 1 inch thick, to form a frame similar to that shown in figure 1. The board at the front should be 8 inches wide, the one at the back 12 inches wide, and the ends of the frame should slope from front to back, as indicated in the figure. The distance between the front and back boards should be the length of the sash to be used in covering the frames. If standard hotbed sash are used 6 feet will be the distance from the outside of the front to the outside of the back. It adds greatly to the convenience of the frame to have crosspieces made, as indicated, to serve as guides for the sash covering the frame.

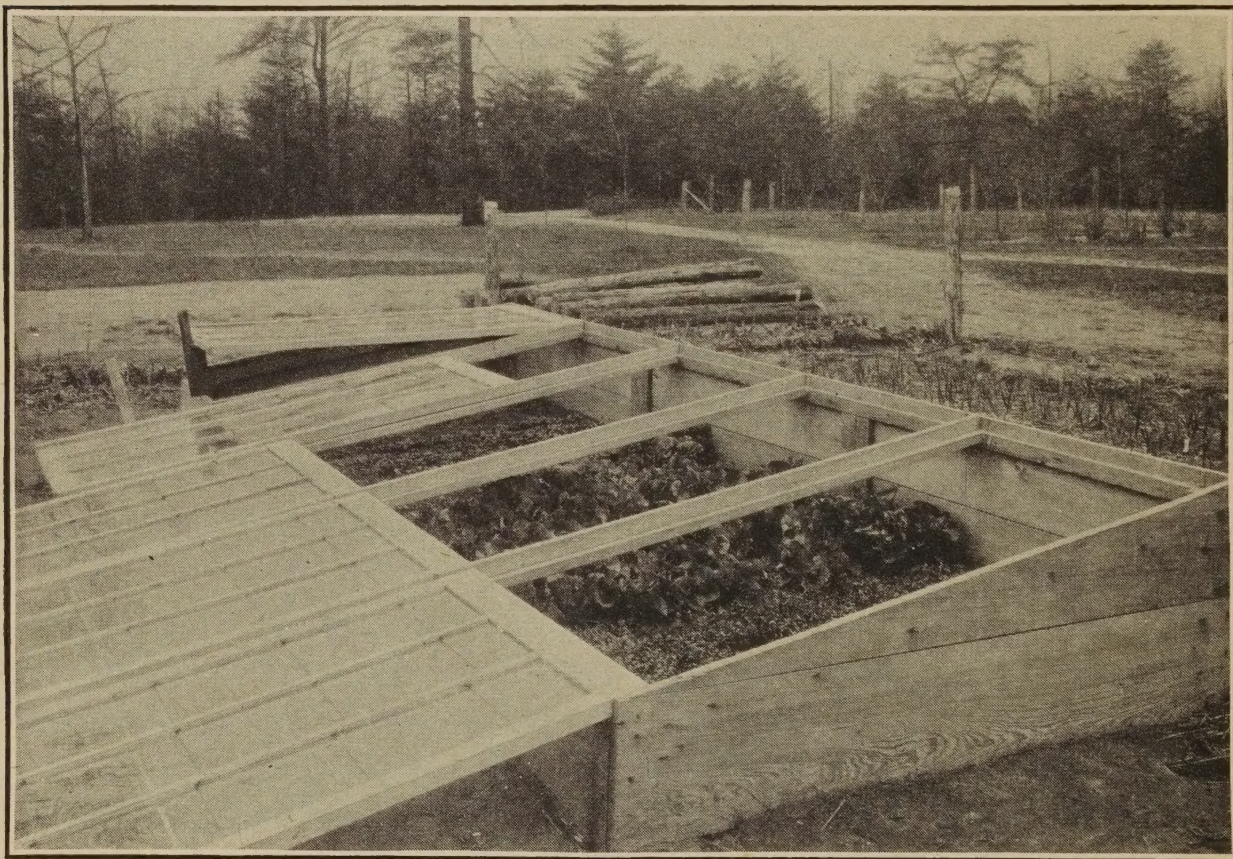


FIG. 1.—A cold frame.

These crosspieces also strengthen the frame and make it better adapted for use either as a cold frame or as a hotbed, the same frame being used for both purposes.

When the frame is to be used as a cold frame the earth covered by it should be made rich by the use of well-rotted manure and fertilizer and spaded to at least 8 inches in depth. Select a well-drained, warm soil in a situation similar to that above described.

The soil upon which the hotbed is placed is of less importance, but the protection of the hotbed is even more essential than that of the cold frame. The hotbed should be constructed by placing fresh fermenting manure from the horse stable in a layer of uniform thickness over an area 3 or 4 feet longer and wider than the frame

to be used. The depth of the manure will depend upon the length of time the hotbed is to be in service, and the intensity of the heat provided will be determined by the freshness of the manure, its depth, and its compactness.

After the manure heap has been built and thoroughly tramped as it is built, place the frame, constructed as above described, on the heap so as to allow it to be banked around each of the four sides with additional fermenting manure. Inside of the frame and on top of the heap of manure place a layer of rich loamy soil to the depth of 3 inches. Cover the frame with sash and allow the heat to develop for 48 hours or more, or until a thermometer inserted in the soil begins to go down rather than to rise. As soon as the temperature has fallen to 90° F. seed can be sown.

VARITIES.

The object in selecting the varieties mentioned below for club work is for the purpose of meeting two needs. First, to produce a high grade market tomato which can be disposed of in the open market so long as the price will justify, and, second, to have a product suitable for canning purposes as soon as the prices for fresh stock become unremunerative.

The fruits for market should be smooth, uniformly ripened both at the stem and blow end, free from disease, and uniform in size and of an attractive color.

There are two qualities which must be taken into consideration in connection with the canned product. First, a variety should be obtained which will give a rich red when processed, and for this purpose it is necessary to select one which is normally of a deep red or scarlet color. All sorts which have pink or yellow as a color factor are not desirable, for they become a straw color in processing. Second, the texture of the fruit should be firm or solid, so that the tomatoes will retain their form when subjected to the cooking required to sterilize them in the cans.

The following varieties will be suitable for club work: Early sort, Spark's Earliana; Standard and canning sorts, Favorite, Stone, and Trophy. Figure 2 shows a good type of tomato.

PLANTING THE SEED.

Plant the seed in the cold frame or in the hotbed in rows about 3 inches apart and scatter the seeds as nearly as possible one-half inch apart in shallow trenches, so that they can be covered about one-half inch deep. After the seeds have been carefully deposited cover them with soil, and if the soil is at all dry water the surface with a sprinkling pot or by using a whisk broom and shaking the moisture over

the surface until it is uniformly moistened. The work of planting and of watering should always be done early in the day—never toward evening.

After the young plants make their appearance, they should never be allowed to suffer from lack of moisture. Any unevenness of the plants along the row will indicate the places which are not receiving sufficient water. Small plants are usually in the driest places. See that weeds do not come up among the young plants and interfere with them.

As soon as the first true leaves have developed on the tomato plants, transplant them to pots or to tin cans in which canned vegetables

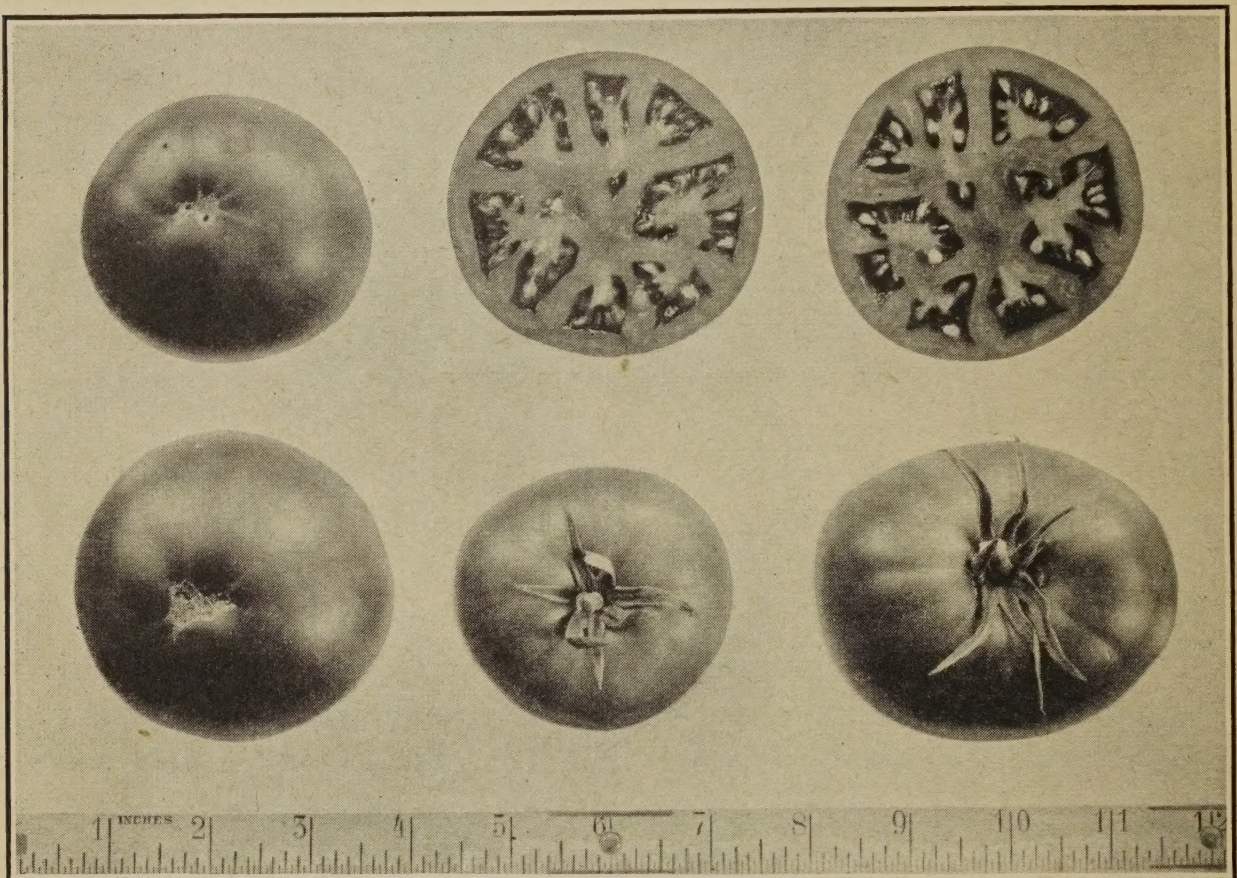


FIG. 2.—A good type of tomato.

have been received. The cans used for tomatoes furnish a very good size for use as a pot for the young plants. If tin cans are used, a convenient method is to melt the top and bottom off, which will usually also unsolder the seam at the side. Tie a string around the rim thus formed and use it as a pot in which to set the young plants. Transplant about one-fourth more plants to these cans than will be needed to plant the area to be devoted to the work. Place these transplanted plants in a cold frame or hotbed and give them careful attention until conditions in the open will justify their being planted. At the time of transplanting them to the field slip a shingle or trowel under the can as it is to be lifted and transfer it to a carrying board.

LOCATION OF PLAT.

Choose, if possible, a well-drained sandy or gravelly loam located so that it is well protected from early autumn frosts by being well up from the bottom of any narrow valley which may be upon the farm. While the richest soil is to be found at the bottom of the hill, that location is more subject to frost than one at the top of the hill. Choose an area which is level or only slightly sloping. Measure off the area so that it will contain 16 square rods. This can be done by using a tape or a pole $16\frac{1}{2}$ feet long and first laying off 1 square rod, then increase this in each direction according to the available area until 16 square rods have been laid off. A convenient plat is one 2 rods wide and 8 rods long.

Make the land moderately rich by the use of stable manure, and if the plants seem to lack in size of foliage or vigor as they develop, sprinkle a tablespoonful of nitrate of soda over an area 2 feet in diameter about the base of each plant, exercising care to prevent the salts coming in contact with the foliage. Another method is to place a tablespoonful of nitrate of soda in a watering can and water the plants with the solution about four times during the growing season.

SETTING IN THE FIELD.

Ordinarily the tomatoes should not be placed in the open until the earliest strawberries have begun to color. At planting time, if the plants are to be tied to stakes, which is undoubtedly desirable for this work, lay off the rows 4 feet apart and set the plants 2 feet apart in the row, which will allow 67 plants in each row, making a total of 603 plants on the one-tenth acre.

Not more than three shoots should be allowed to develop from near the base of each plant. As they grow tie them carefully to a stake at least 4 feet tall driven in the soil beside each plant. In tying, be careful to use some soft twine or other material, making first a tie around the stake and a loose loop under the base of a leaf and around the stem, so as to avoid cutting the stem of the plant as it increases in size.

In those sections of the country which have a long growing season and it is not desired to secure fruits for the early market, tomato seed can be planted in the open at the same time that corn is planted and will yield a fairly good return of late fruits. The distance for planting can be the same as above suggested for the transplanted plants.

CULTIVATION.

The tomatoes should have frequent shallow cultivation to prevent competition from weeds and to maintain a loose mulch of earth over the ground to prevent evaporation and to take up and hold water which falls in showers. As soon as the ground is in fit condition after a shower, cultivation should be commenced. The drier the season the more frequent should be the cultivation, so as to prevent the

formation of a crust or the compacting of the soil as a result of walking between the plants.

PRUNING AND STAKING.

The plants which are tied to stakes as above suggested should be carefully pruned, so that no side branches develop on the one, two, or three stalks which are to be tied to the stakes. If tying is carefully attended to, the fruits will be exposed to the air and sunlight and will ripen more evenly than when lying on the ground or partly shaded by the foliage of the plant. Figure 3 shows a club plat with vines pruned and well staked.

SPRAYING.

The plants should be sprayed with Bordeaux mixture several times during the season. A treatment should be given about the time the



FIG. 3.—Club plat with tomato vines pruned and well staked.

first fruits begin to form, or earlier if the season is warm and moist, to prevent the plants being attacked by mildew. If tomatoes with a discolored brownish area about the blossom end appear in any fruit cluster they should be carefully removed and carried out of the patch.

BORDEAUX MIXTURE.

Bordeaux mixture is made as follows: Take 1 pound of lime and 1 pound of copper sulphate and dissolve them separately in equal amounts of water in wood or earthen vessels. After they are both in solution dilute each to 6 gallons, and just before the spraying is to be done pour the two diluted solutions together to form the spray mixture. If the spraying apparatus is small and only a portion of the mixture can be used at a time, take equal quantities from each dilution

and place them in the spraying receptacle in such a manner as to thoroughly mix them. As the solutions are taken from the dilution tanks and placed in the sprayer they should be strained through a fine wire gauze or a cheesecloth screen to remove all fine particles of lime which might clog the nozzle. In spraying, care should be exercised to coat the under side of the leaves with the spray mixture, as the mildew usually establishes itself first on the under side of the



FIG. 4.—Club member grading and crating products for market.

leaves. The spray pump and nozzles should be such as to deliver a fine mistlike spray.

HARVESTING.

Fruits which are intended for market should be well colored, firm, and without cracks or rotten spots. All rough or deformed fruits should be removed from those to go to market. The more nearly uniform in size, shape, and color the market product can be the higher the price. (Send for Farmers' Bulletin 220, Tomatoes.) Figure 4 shows a club member grading and crating products for market.

Fruits for canning purposes should be thoroughly ripened. The stage of ripeness can best be determined for each variety by picking fruits which are dead ripe, some which are well ripened, and some which are merely well colored, and processing a can of each lot which are so marked that when they are opened each lot can be identified. Open a can from each lot and observe the color of the contents. If the tomatoes were of a pure red color, those which were dead ripe should give a deep-colored canned product, those which were considered to be well ripened should give a somewhat lighter color, and those which were merely colored should be somewhat yellowish or straw color in appearance. The riper the fruit which can be successfully handled the better the canned product both in quality and appearance. (See Farmers' Bulletin 521, Canning Tomatoes at Home and in Club Work.)

CLUB REQUIREMENTS.

Note carefully the club requirements as to age, acreage, basis of award, and the six rules governing the Garden and Canning Club work in the Northern and Western States, as follows:

Age: 10 to 18 years, inclusive.

Acreage: One-tenth acre, chiefly tomatoes. A few other vegetables if necessary. Club members are required to can all surplus products and are also advised to can the otherwise waste products of home, garden, and orchard. (See Farmers' Bulletins 359, 426, and 521.)

Basis of award.

(1) Quality, both fresh and canned products.....	20
(2) Quantity (total pounds of vegetables harvested and used)....	20
(3) Variety of canned products (different recipes used).....	20
(4) Profit on investment.....	20
(5) Written history on "How I made and used my garden crop".	20
Total score.....	100

What club members should agree to do:

(1) Attend, if possible, all field, local, and county meetings of instruction called by teacher, county superintendent, or club leader.

(2) Follow carefully all club instructions, especially those relating to management of club plat, crop management, and sale and care of products.

(3) Keep an accurate account of all items of expense, receipts, observations, and experiments in connection with the club plat. (See your crop-report blank for instructions.)

(4) Make an exhibit of club products at district, county, or State fair or other exhibition or contest of a club interest.

(5) Fill out the regular crop-report blank with pen and forward the same, correctly signed and attested, to our State agent. If no State agent has been appointed, forward the report direct to the United States Department of Agriculture, Office of Farm Management, Washington, D. C.

(6) Give a written account on "How I made and used my garden crop." If convenient, give account in form of an illustrated booklet 9 by 11 inches. (See special outline furnished by the Department of Agriculture.)

DESCRIPTION OF VARIETIES.

Spark's Earliana.—One of the earliest varieties and a reliable and abundant yielder, especially on rich sandy soil. Fruit medium to large, uniformly well shaped, of bright-red color, and of good quality, though not very solid.

Chalk's Early Jewel.—An early-maturing sort, doing especially well on clay soils. Fruit uniformly smooth, bright colored, and good quality.

Crine's June Pink.—One of the earliest maturing pink-fruited sorts, the fruit being oval and uniformly well colored and fair quality.

Livingston's Favorite.—The vine is especially hardy and a sure cropper. Fruit large, oval, bright red, a little soft, but of good flavor.

Optimus.—A very reliable cropper; the round, smooth fruit is rather below medium size, but uniformly well colored and handsome. The firm, finely colored flesh is of exceptionally good flavor and desirable for canning whole.

Dwarf Champion.—Distinct habit of vine, which is short jointed and erect in growth, with thick crumpled leaves, and can be set much closer than the more spreading sorts. Fruit purple, round to oval, fairly smooth and solid.

Perfection.—Especially strong-growing, vigorous vine, a very abundant and persistent cropper. Fruit medium sized, smooth, round, excellent for canning.

Atlantic Prize.—A comparatively small, quick-growing vine, usually forming a large central cluster of fruit, which matures very early, but fruit is not as smooth or uniform as that of some other sorts and is not readily salable after more attractive sorts ripen.

Trophy.—A strong-growing but compact vine, uniformly yielding a good crop of large, oval, but not always smooth fruit, which is of bright-red color and excellent quality, preferred by many for canning.

Mikado, or Turner's Hybrid.—A strong-growing vine, with broad leaves and small clusters of very large oval and often irregularly shaped and colored purple fruit which is very fleshy, having comparatively little pulp and few seeds.

Ponderosa.—A very large, few-branched vine, with fruit of the largest size, but often irregular in shape and unevenly ripened. It has few and very small cells and little pulp, and when served in slices is quite suggestive of the name "beefsteak" tomato, by which it is often known.

Acme.—Vine vigorous and a very certain but moderate yielder of quite uniformly round, smooth, but often unevenly colored fruit, but which when well ripened is a very attractive deep-purple color.

Livingston's New Globe.—Vine vigorous and reliably productive of uniformly smooth, globe-shaped or slightly elongated fruit, which is

a little slow to color up, but which when full ripe is exceedingly beautiful in color. Desirable for canning or for serving in slices with salad.

Beauty.—A vigorous and hardy vine; is uniformly productive of large, oval, slightly flattened, purple-red fruit, which carries more pulp than many sorts and is especially desirable for stewing.

New Stone.—Although the vine is only medium sized, it is very hardy and uniformly productive of medium-sized to large round or oval fruit, which is exceptionally uniform in size and color, making it a very desirable sort for canners' use and for market.

Matchless.—A large, few-branched vine bearing very large handsome shaped and colored fruit of the finest quality, but which is too tender to bear shipping even to near-by markets. One of the finest sorts for the home garden.

Royal Red.—Similar to the Favorite, but brighter in color and stands shipment better.

Yellow Plum.—A small yellow plum or pear shaped sort, especially desirable for tomato figs and other preserves.

Husk, or Ground Cherry.—Not properly a tomato, but widely known as such. Very productive of cherry sized and shaped fruits, which are protected by an inclosing husk or pod and are excellent for preserves or for eating uncooked.

